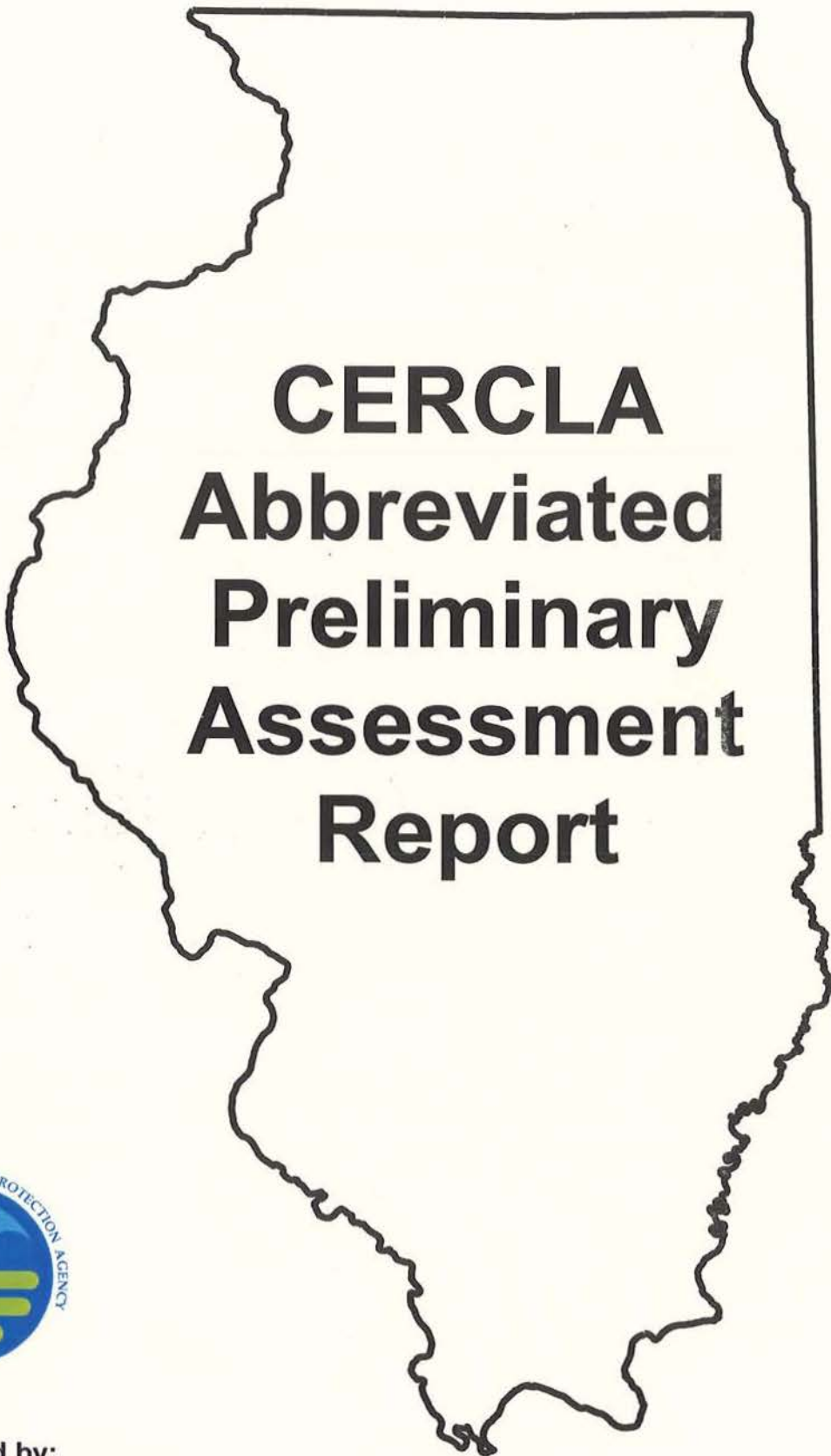


LPC# 197 477 5001 Will County
The Nutrasweet Group aka: Inolex
ILD# 980 793 020
SF/HRS



CERCLA Abbreviated Preliminary Assessment Report

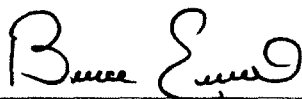


Prepared by:
Office of Site Evaluation
Division of Remediation Management
Bureau of Land

SIGNATURE PAGE

Title: CERCLA Preliminary Assessment for The Nutrasweet Group

Preparer: Bruce Everetts, Office of Site Evaluation, Illinois Environmental Protection Agency




Signature

2/28/11

Date

Approval: Patrick Hamblin, Acting Chief, United States Environmental Protection Agency, Region 5



Signature

4/28/11

Date

The approval signatures on this page indicate that this document has been authorized for information release to the public through appropriate channels. No other forms or signatures are required to document this information release.

**CERCLA
Abbreviated Preliminary Assessment –**

for:

**The NutraSweet Company
University Park, Illinois
U.S. EPA ID: ILD980793020**

**PREPARED BY:
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF LAND
DIVISION OF REMEDIATION MANAGEMENT
OFFICE OF SITE EVALUATION**

February 28, 2010

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Section 1.0 Introduction

On May 8, 2009, the Illinois Environmental Protection Agency's (Illinois EPA) Office of Site Evaluation was tasked by United States Environmental Protection Agency (U.S. EPA) Region V to conduct an Abbreviated Preliminary Assessment (APA) at the NutraSweet Company in University Park, Illinois. The NutraSweet facility is located at 2600 Bond Street in University Park, Will County. The APA is performed under the authority of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) commonly known as Superfund.

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR Part 300) requires a Preliminary Assessment (PA) be performed on all sites entered into the Comprehensive Environmental Response, Compensation, and Liability System (CERCLIS), U.S. EPA's inventory of hazardous waste sites..

The Abbreviated Preliminary Assessment can often determine whether a site should proceed through the Superfund process or be removed altogether with less information than is required for a conventional Preliminary Assessment. The Abbreviated Preliminary Assessment uses the same information as a conventional Preliminary Assessment but relies on best professional judgment to make decisions about a site at earlier stages in the process.

If the findings of the Abbreviated Preliminary Assessment determine that further investigation is necessary, the site will continue to progress through the Superfund process and receive a Site Inspection. A Site Inspection will evaluate the extent that a site presents a threat to human health and/or the environment. This may be accomplished by collecting and analyzing wastes and environmental media samples to

determine whether hazardous substances are present at the site and are migrating to the surrounding environment. The Site Inspection will provide necessary information that will determine if the site qualifies for possible inclusion on the National Priorities List (NPL) or should have No Further Remedial Action Planned (NFRAP). At any time throughout the Superfund evaluation process, the site may be NFRAP, be referred to another state or federal clean-up program, or recommended for further action. The Abbreviated Preliminary Assessment is performed under the authority of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) commonly known as Superfund.

Section 2.0 Site Description and History

2.1 Site Description

The NutraSweet facility is located at 2600 Bond Street in University Park, Will County, Illinois (Figure 1). The facility occupies 28 acres and is bordered to the north by University Park Energy, to the east by a railroad spur line and Recycled Paper Greetings, to the south by Bond Street, and to the west by farm fields and a pond. The site is located in the Northeast $\frac{1}{4}$ of Section 17, Township 34 North, Range 13 East of the 3rd Principal Meridian with the following coordinates: 41.436111° N latitude, 87.7513789° W longitude. The topography of the land is flat to gently sloping in a northeasterly direction (Figure 2). Land use is a mixed industrial and agricultural. The closest residents are more than a half-mile away from the facility. The site is currently fenced-in and contains a 48,000 square-foot processing building, a 23,125 square-foot office and laboratory building, a 5,950 square-foot pilot plant, a 40,000 cubic-foot

concrete Storm Water/Spill Containment System, a 400,000 gallon equalization basin and a 77,000 square-foot parking lot (Figure 3).

2.2 Operational History

Prior to 1982, operations at the NutraSweet facility were managed by American Can Company/Inolex Division. Information on American Can is limited to a Resources Conservation and Recovery Act (RCRA) Part A permit application. American Can was involved with the manufacture of pharmaceutical products and began operation at the facility in late 1972. Activities of American Can included the recovery/reclaiming of solvents such as acetone, toluene, ethanol, methanol, hexane, and isopropanol. Recovery of solvents was performed using various distillation columns. American Can ended its operations by June 1981, and the facility was sold to Hainesport Realty Venture. In September 1981, G. D. Searle leased the facility from Hainesport Realty Venture and refurbished the facility. Operations at Searle involved the manufacture of NutraSweet brand sweetener. In 1986, Monsanto Corporation bought Searle and in February 1986, Searle changed its name to The NutraSweet Company. Operations at the property remained the same.

Operations at the NutraSweet facility included the manufacture of Aspartame, the NutraSweet brand sweetener. In producing the sweetener, the facility carried out processes in its quality control laboratory and its pilot plant. The actual manufacturing process consisted of the following steps: esterification, neutralization, extraction, dehydration, hydrogenation, sparging, dewatering, and filtration.

Raw materials used at the facility included the following chemicals: acetic anhydride, ammonia (anhydrous), hydrochloric acid, sulfuric acid, sodium hydroxide, methanol, toluene, and two different amino acids. Methanol and acetic anhydride were used by the facility for the purpose of driving away water during reactions in the manufacture of Aspartame. Anhydrous ammonia is used for acid/base neutralization, while hydrogen is applied during a hydrogenation reaction. Hydrochloric acid, sulfuric acid, and sodium hydroxide are all used for pH adjustment. Methanol is recovered via distillation columns. Toluene, which is used and generated in various organic reactions, is sold to various off-site recycling facilities. Ethylene glycol was formerly used by the facility as a coolant medium during organic reactions. However, NutraSweet stopped using this material, which was recirculated in a closed system and reused for this purpose. All of the above-mentioned raw materials (excluding hydrogen and amino acids) were stored in 12 various sized aboveground tanks located outdoors in an area known as the tank farm. The tank farm is approximately 4,100 square feet in size. Hydrogen was stored in a 9,000-gallon tank on the southeast corner of the facility, while the amino acids were stored in fiber drums and palladium catalysts were stored in metal drums in a warehouse located southeast of the facility.

NutraSweet also stored product diesel fuel and gasoline on site. The facility had five aboveground diesel fuel tanks and one aboveground gasoline tank at indoor and outdoor locations throughout the facility. NutraSweet also had 15 underground storage tanks that stored spent methanol and toluene, which were removed in September 1986.

NutraSweet constructed a 40,000-cubic foot concrete Storm Water/Spill Containment System and an Anaerobic Wastewater Treatment Unit in 1992. The

facility installed a Vapor Combustor Unit in 1989 in order to reduce its volatile organic compound air emissions.

In addition, onsite is a 400,000-gallon Equalization Basin. All plant process wastewater and noncontact cooling waters were diverted to this basin. In the basin, flow was equalized, adjusted for pH, and monitored for biochemical oxygen demand and total dissolved solids prior to discharging to the Consumer Illinois Water Company (CIWC) via the sanitary sewer.

NutraSweet had operated at the University Park, Illinois facility since 1986 and employed approximately 200 people. The facility consisted of a 48,000-square foot process building, 23,125 square feet in office and laboratory buildings, and a 5,950-square foot pilot plant. Also, 4,100 square feet area was occupied by a tank farm, and the facility has a 77,000 square foot parking lot located on its west side. Searle operated at the facility from 1982 to February 1986, before changing its name to NutraSweet. Despite the change in name, operations remained the same.

In July 1996, the site was purchased by Takasago International Corporation (Takasago). Takasago produces flavors, fragrances, aroma chemicals and fine chemicals. While operating the facility in University Park, Takasago produced the following chemicals:

- 1,4-dioxacycloheptadecane-5,17-one
- 5-methylfuran-2(3H)-one
- Isobornyl cyclohexanol
- Isobornyl cyclohexanol in isopropyl myristate
- 1,2-propanediol, 3-[[5-methyl-2
- Cyclohexanemethanol, 2-hydroxy-alpha,alpha-4-trimethyl
- 3,7-dimethyl-6-octenenitrile
- 1,3-benzodioxole-5-propanol, alpha-methyl
- 5-methyl-2-isopropyl-cyclohexanol
- 2,6-dimethyl-2-octanol

- Phenol, 4-(Butoxymethyl)-2-methoxy
- 3,7-dimethyl-6-octenal

The raw materials used to produce the chemicals are listed in Appendix A.

Takasago continued operations until August 2003. When operations ceased, remaining products and raw materials were shipped to a Takasago facility in Northvale, New Jersey. In December 2003, the facility was sold to the current owner, International Process Plants and Equipment. International Process Plants and Equipment is currently searching for a buyer of the facility. In March 2004, the last remaining hazardous waste from the Takasago operations was removed by Univar Company of Summit, Illinois

2.3 CERCLA and Previous Environmental Investigative History

On November 4, 1992, The NutraSweet Company (NutraSweet) in University Park, Illinois was added to CERCLIS. Federal action was taken to add NutraSweet to CERCLIS.

There is no CERCLA investigation history, but there have been other environmental investigations. A RCRA Preliminary Assessment/Visual Site Inspections was completed by PRC Environmental Management, Inc. of Chicago, Illinois in February 1993 for the U.S. EPA. Also, a privately-funded Phase II site investigation was completed by URS Corporation in Chicago for Takasago as a requirement of the sale of the property from Takasago to International Process Plants and Equipment. The following paragraphs describe these investigations of the site.

2.3.1 PRC Environmental Management Preliminary Assessment

In November 1992, PRC Environmental Management, Inc. (PRC) completed a Preliminary Assessment/Visual Inspection (PA/VS) of the NutraSweet site. This

investigation focused on Resource Conservation and Recovery Act (RCRA) solid waste management units (SWMU) and areas of concern (AOC). The PA/VSII identified ten SWMUs and one AOC. The PA/VSII was conducted to assess the existence and likelihood of releases from SWMUs and the AOC.

The AOC was a 4,500 square feet area on the north end of the facility where approximately 179 pounds of virgin ethylene glycol (44 percent) were released into the soils in May 1992. All freestanding ethylene glycol was vacuumed into drums and heavily saturated soils were immediately shoveled into drums to prevent further migration. Initial sampling of the area was performed by Microbac Laboratories, Inc. Results indicated that ethylene glycol concentrations in the soil ranged from less than 500 ppm to 3,000 ppm. The area affected was then excavated to a depth of 24 inches, and the excavated soil, along with the drummed liquid ethylene glycol and saturated soils, were immediately sent to County Environmental Landfill of Pontiac, Illinois. Post-sampling was performed by Microbac Laboratories, Inc. on the excavated area and results showed that concentrations of 1,820 ppm ethylene glycol existed in some samples. The sample area was excavated an additional six inches but further sampling was not performed.

It was recommended by PRC that eight of the SWMU's required no further action. Two SWMUs, an equalization basin and former tank farm undergo RCRA-closure because proper closure of these two SWMUs had not occurred. The PA/VSII also recommended that the owner of the facility at the time, Nutrasweet, determine if remediation on the AOC was adequate.

2.3.2 Takasago Phase II Site Inspection

In October 2005, URS Inc. (URS) conducted a Phase II Site Inspection for Takasago International Corporation (USA), (Takasago), for the purpose of selling the property. The investigation conducted by URS included collecting soil samples to be analyzed for volatile organic compounds (VOCs), benzene, toluene, ethylbenzene, and xylenes (BTEX); manganese, sulfate, total organic carbon (TOC) and pH. In addition, a groundwater sample was collected for VOC analysis.

Analysis from seven of the soil samples collected produced toluene levels above the Illinois EPA's Tiered Approach to Corrective Action Objectives (TACO). The groundwater sample results had no VOC levels exceeding TACO.

URS recommended that additional groundwater investigations be conducted to determine if contamination has occurred. In addition, additional soil samples need to be collected to determine the range of toluene soil contamination at the site. At present, no further actions regarding these recommendations have occurred.

Section 3.0 RCRA Activities

In August 1980, American Can, the owner and operator of the site before NutraSweet, submitted a Notification of Hazardous Waste Activity form to the U.S. EPA as a generator as well as a treatment, storage or disposal (TSD) facility. American Can submitted a RCRA Hazardous Waste Part A permit application in November 1980. Wastes were managed in both an 18,000-gallon tank storage unit and a 400,000-gallon equalization basin treatment unit. Because American Can never underwent proper

RCRA-closure, the tank storage unit and equalization basin remain as RCRA-regulated units.

After American Can sold the facility, NutraSweet removed the tanks from the tank storage unit. NutraSweet submitted a request to retain the interim status under which American Can operated. The EPA rejected this request because the facility did not meet the requirements for a change in ownership as specified in 40 CFR 122.23 (c) (4). There are no documents showing the facility has had proper RCRA-closure.

Section 4.0 Discussion of Migration Pathways

4.1 Introduction

This section includes information used in analyzing the site's impact on the four pathways identified in CERCLA's Hazard Ranking System (HRS). The CERCLA Site Assessment Process identifies three migration pathways and one exposure pathway by which hazardous substances may affect human health and/or environmental targets. Targets include human populations, fisheries, endangered species, wetlands, and other sensitive environments. Sites are evaluated on their known or potential contamination of these four pathways. The four pathways evaluated are surface water migration, groundwater migration, soil exposure, and air migration.

4.2 Surface Water

Surface water is water present at the earth's surface. Surface water includes rivers, lakes, ocean-like water bodies and coastal tidewater. Contamination could affect three targets through release into the surface water. These three targets are drinking water supplies, fisheries, and ecosystems.

Of the three targets, the one target of concern for NutraSweet site is ecosystems (sensitive environments). The other two are minimized by the fact that there are no streams or rivers that are fisheries near the site, and the drinking water is provided by groundwater in aquifers under the area. The following paragraphs will discuss the two sensitive environments near the NutraSweet site, ponds near the facility and Forked Creek.

There are various small ponds which are classified as wetlands near the NutraSweet site which could be affected by a release. However, a storm water and runoff containment facility built in 1992 would minimize the possibility of a release due to the fact that excess storm water would enter the city storm water drainage system. Because of the close proximity of the ponds to the site, there is a possibility if the groundwater on the site became contaminated the groundwater could migrate to the ponds.

An overland flow route from NutraSweet could exist if water would flow off the site. A route, starting in the southwest corner of the property, running through ditches and culverts in a westerly direction and then turning in a southern direction could release into the Forked Creek approximately one-half (1/2) mile from the NutraSweet site. Forked Creek flows in a southwestern direction, along which wetlands which could be affected by a release. Because of the nature of the ditches and culverts, the water flow is not perennial and movement of water off the site would only occur during a precipitation event. (Appendix B).

4.3 Groundwater

Groundwater is fresh water from rain, melting ice and snow that soaks into the soil and is stored in the tiny spaces between rocks and particles of soil. The target for groundwater migration is drinking water. The following paragraphs describe the geology contributing the groundwater, the number of wells that obtain groundwater for drinking water and the current condition of that water.

Bedrock formations in NutraSweet site area consist mainly of Silurian age dolomite, sandstone, and shale. A Silurian shallow bedrock aquifer produces the source of groundwater used in the drinking wells. The aquifer is overlain by till or other fine-grained material of low permeability. The surface of these deposits is approximately 100 feet below the surface and can be approximately 500 feet thick. Groundwater movement within the Silurian dolomite occurs in joints, fissures, solution cavities, and bedding plane openings.

There are 14 municipal water wells and numerous private groundwater wells located within the four-mile radius of the site. Two wells serve University Park within a quarter (1/4) mile of the site (Appendix C). The wells have depths of 457 and 460 feet. Regional groundwater movement within the Silurian system of northeastern Illinois tends to be in a northwestern to southeastern direction. The Bureau of Water for the Illinois EPA has determined that the water supply for University Park is not susceptible to contamination. The information used to make this determination are monitoring conducted at the wells, monitoring conducted at the entry point to the distribution system, and the available hydrogeologic data on the wells.

4.4 Soil Exposure

The soil exposure pathway evaluates the threat to individuals and sensitive environments (ecosystems) of exposure to contamination from the surface. Exposure from the soil is minimized because of the type of soil and location of the site. The following paragraphs describe the soil and location of the site.

According the Will County Soil Survey by the Natural Resources Conservation Service, there are two types of soil, Frankfort silt loam and Bryce silty clay on the NutraSweet site (Appendix D). The Franklin silt loam, which covers a majority of the area, is a somewhat poorly-drained silt loam that has a slope of 2 to 4 percent that has a moderately low permeability. The Bryce silty clay is a poorly-drained silty clay that has a slope of 0 to 2 percent that also has moderately low permeability.

Currently, there is only one worker, who provides security, on the site. The vegetation, pavement, and building would help minimize the soil impact on the worker. The site is fenced, which makes exposure to local residents more difficult because of the limited access. There are no residences, schools or daycare facilities within 200 feet of the site. The site is currently not in operation. However, the current owner, International Process Plants and Equipment, has the site on the market to sell.

4.5 Air

Air migration is the pathway of exposure of ingesting contaminated air from the source of contamination. There are two targets, human populations and sensitive environments (ecosystems), that contamination from an air release could affect. Because of the current conditions, exposure through the air is minimized. A release to air is not expected under the current conditions because the facility is not in operation.

There have been three documented releases of toluene to the air when NutraSweet was operating the facility. These releases occurred in 1989, 1990, and 1991.

The soil on the property is covered by buildings, pavement or vegetation, which would limit exposure of soil to the air. The areas where toluene was found in the soil are under pavement or areas covered with vegetation. There is one person at the site who provides security, and the area is fenced to prevent access from the public. The facility is in an industrial park and the nearest resident is over half-mile away. This would limit the amount of people who could have access to the area and possibly be exposed.

Section 5.0 Summary and Conclusion

The NutraSweet Site has been the scene of chemical production from 1972 to 2003. At first, this site was owned and operated by the American Can Company. The facility was acquired by G.D. Searle to produce the NutraSweet artificial sweetener. Takasago International Corporation purchased the facility to produce flavors, fragrances, aroma chemicals and fine chemicals. Operations at the site stopped in 2003 when the facility was sold to International Process Plants and Equipment, the current owner.

The presence of hazardous materials has been a concern on the site since the 1980s. A RCRA Hazardous Waste Part A permit application for the site was prepared in 1980. Research conducted for the NutraSweet site has produced no evidence of RCRA closure at site. In 1992, this site was added to CERCLIS. A PA/VSIs was conducted in November 1992. In October 2005, a Phase II investigation was conducted

by Takasago. This investigation produced evidence that there was VOC contamination in the soils at the site, in particular, toluene.

The three main pathways of concern for release and exposure are the soil, surface water and groundwater. Due to structures and vegetation on the site, the site being located in an industrial park, and the property having a security fence, the possibility of contamination from soil exposure is expected to be minimal. Concern for exposure from a surface water release is minimized due to an engineered storm water and run off containment facility and the nearest overland surface water route is over one-half (1/2) mile away from the site. Groundwater contamination would be the greatest of a concern for release and exposure. The location of two wells within approximately one-quarter (1/4) mile as well as another 12 wells within four miles raises concern of possible contamination. Testing of the wells by the Illinois EPA has revealed no contamination to this date. The geology of the area should inhibit the migration of contaminants to the groundwater.

Section 6.0 References

Illinois Environmental Protection Agency, Bureau of Land; File for NutraSweet Company, LPC # 1970720002.

Illinois Environmental Protection Agency, Bureau of Water; Source Water Assessment Program Fact Sheet for Consumer's Illinois Water University Park, Facility #1975030.

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URS Corporation. Phase II Investigation, Takasago International Corporation (USA), University Park Plant, University Park, Illinois. October, 2005.

Figure 1
Site Location Map



Figure 2
Site Topographic Map

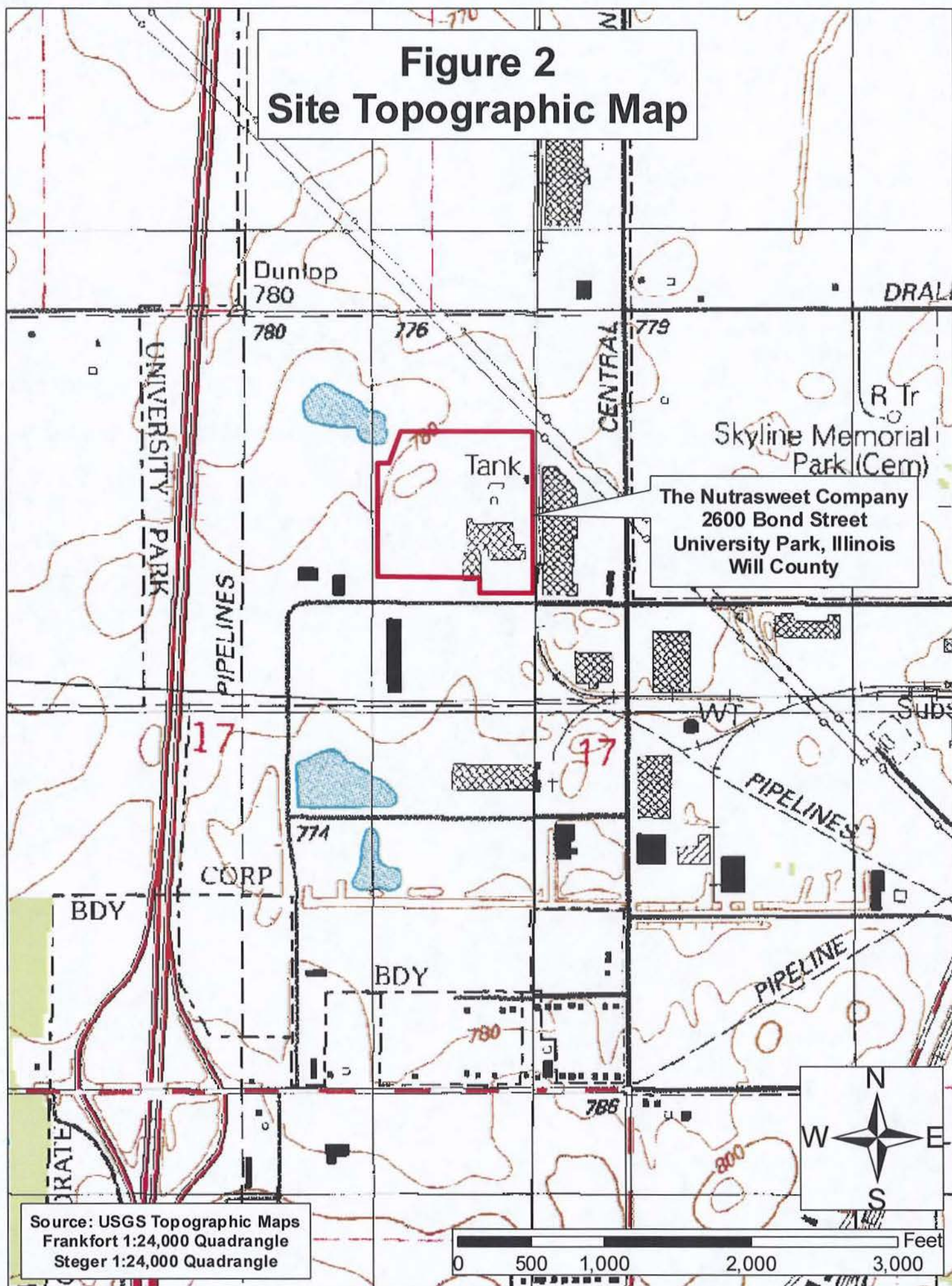
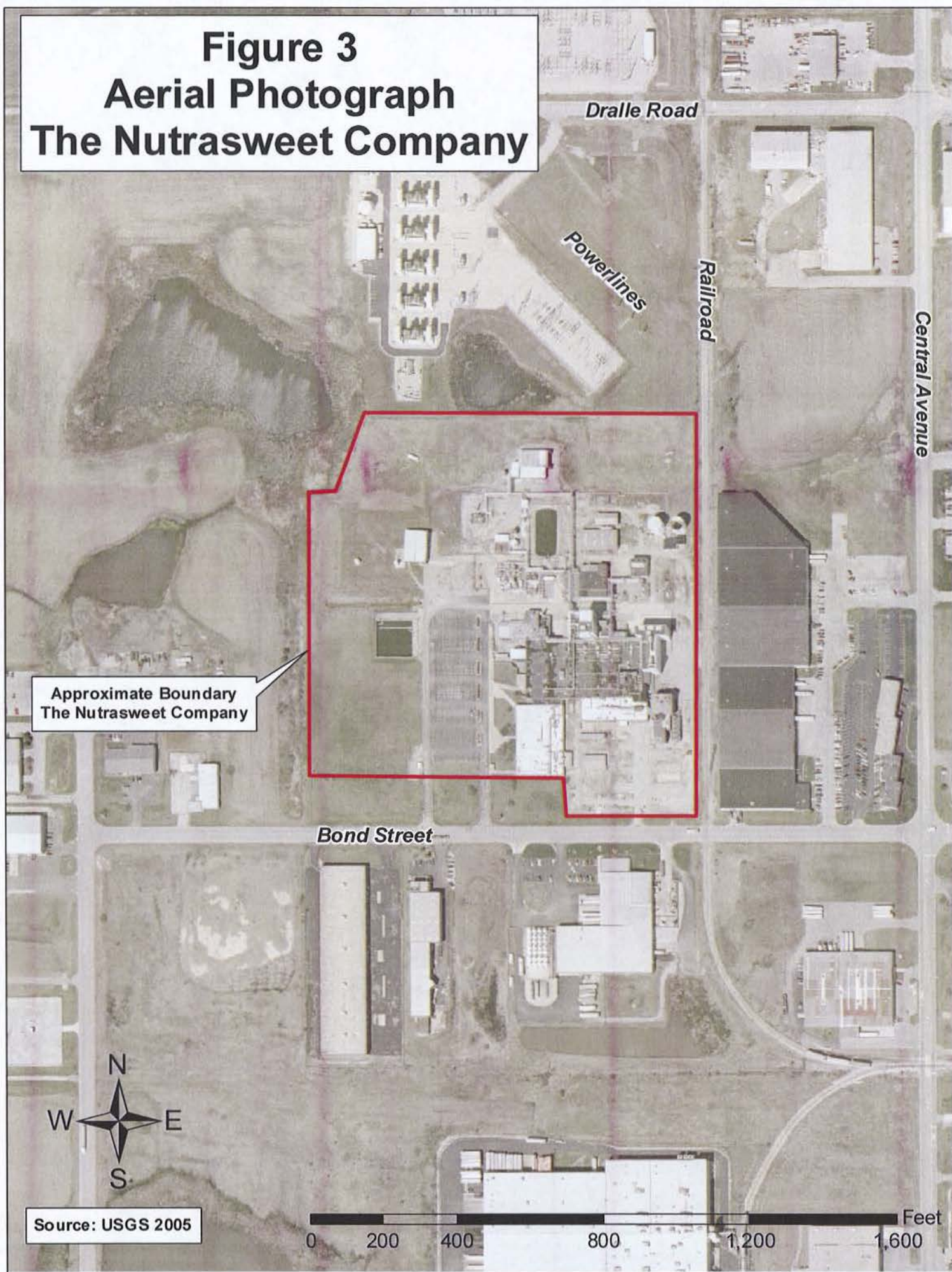
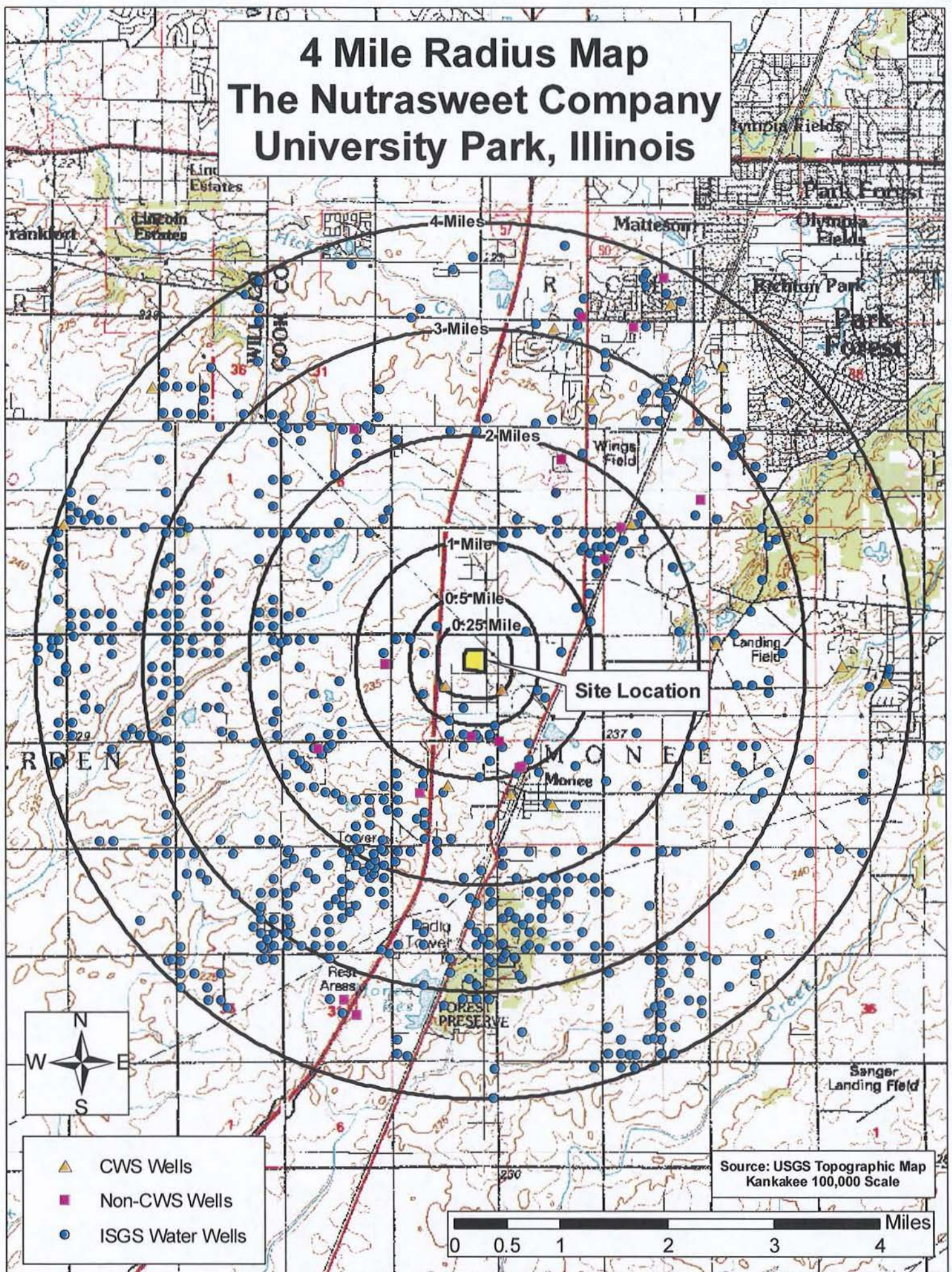


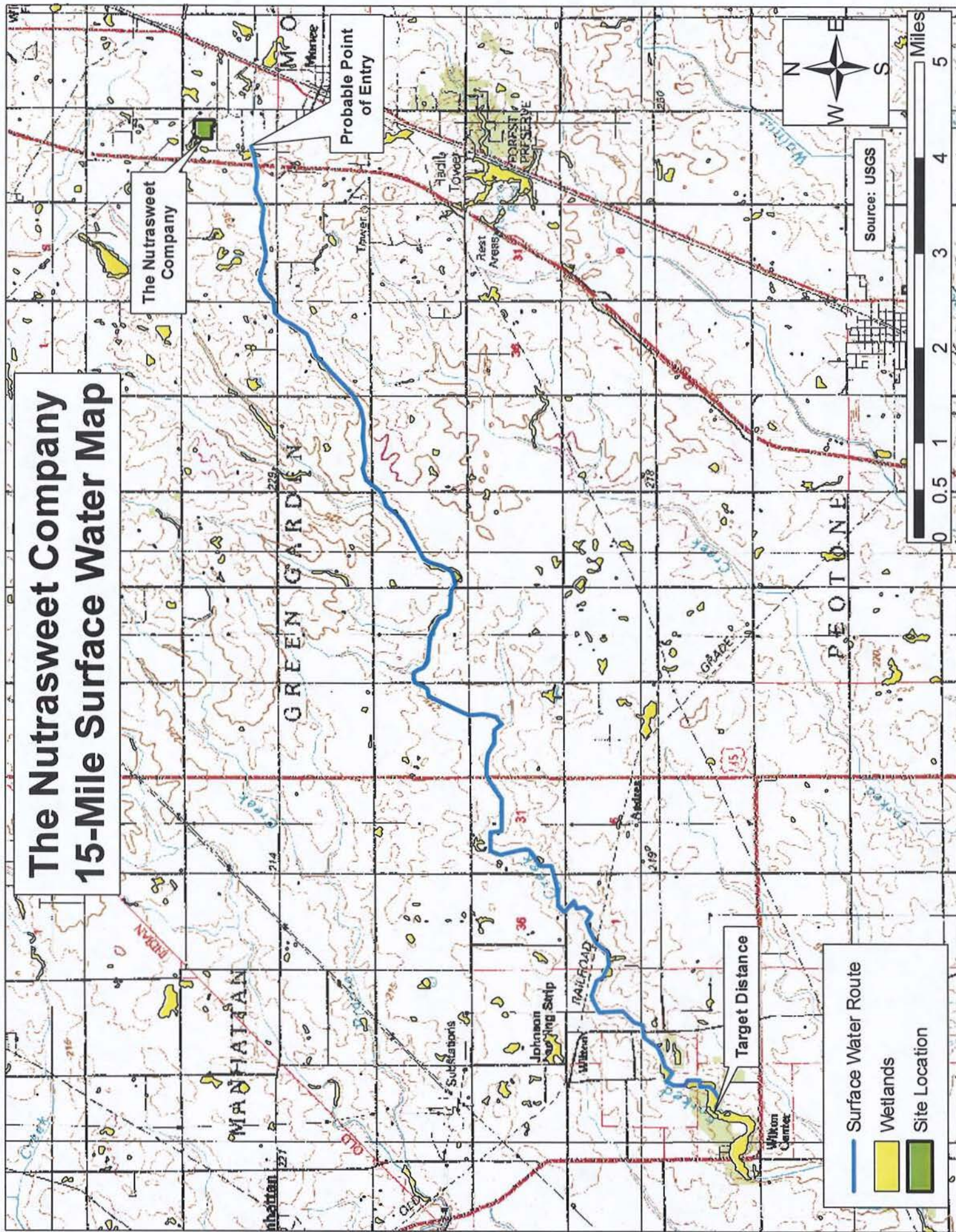
Figure 3
Aerial Photograph
The Nutrasweet Company



4 Mile Radius Map The Nutrasweet Company University Park, Illinois

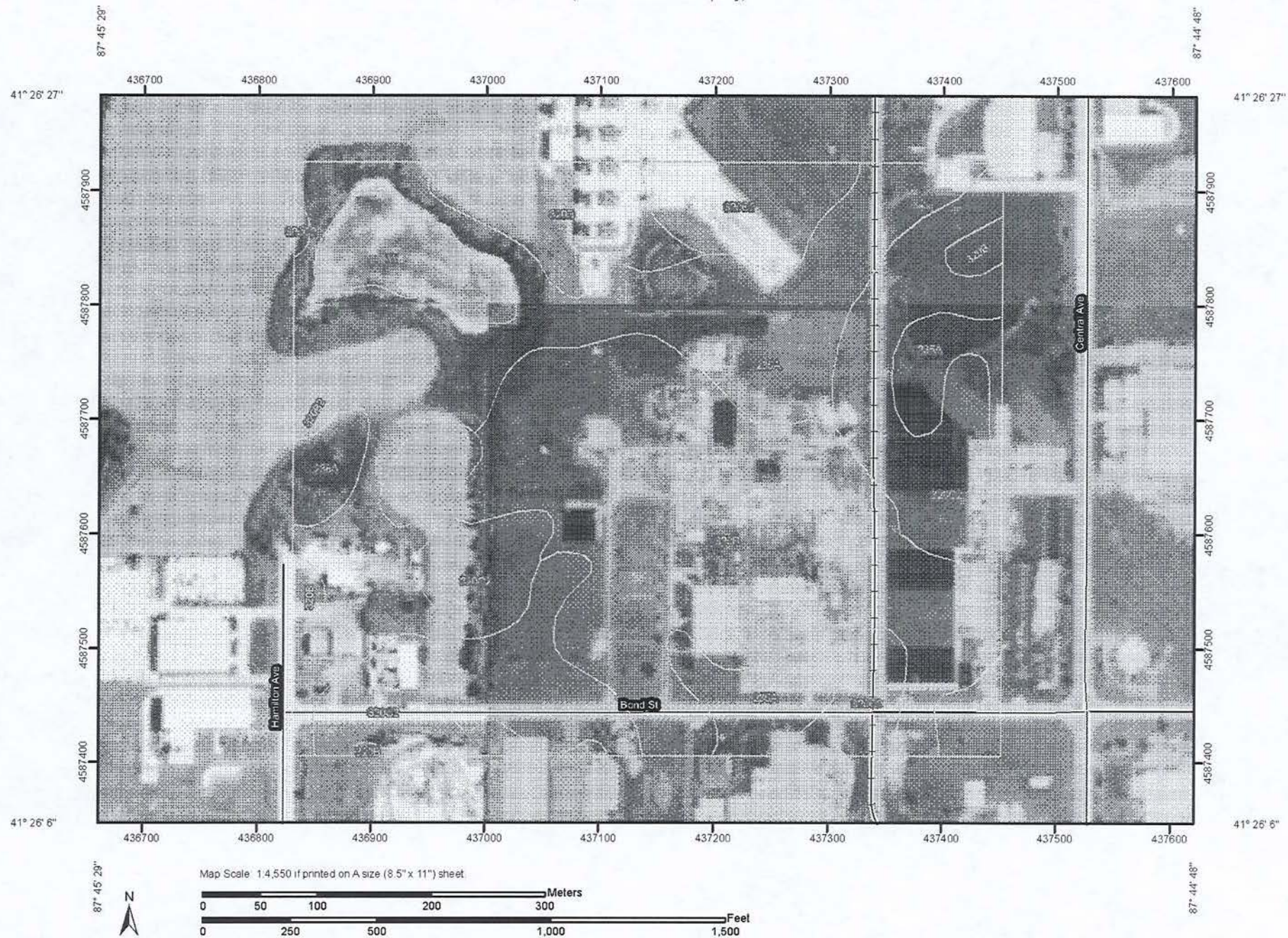


The Nutrasweet Company 15-Mile Surface Water Map









































Raw Materials Used by Takasago	
Chemical	CAS #
1, 4-Dioxacycloheptadecane-5, 17-dione	105-95-3
acetic acid	64-19-7
ACETIC ANHYDRIDE	108-24-7
ACETONE	67-64-1
Aluminum	7429-90-5
ALUMINUM CHLORIDE POWDER	7446-70-0
Benzyl trimethyl ammonium chloride	56-93-9
B-NAPHTHALENE SULFONIC ACID	120-18-3
CAMPHENE 46	79-92-5
CITRONELLAL OXIME	22457-25-6
Cyclohexanol	108-93-0
D-CITRONELLAL-DM	2385-77-5
EPICHLOROHYDRIN	106-89-8
Ethylene glycol	107-21-1
Ethylene-Propylene polymer	9010-79-1
GUAIACOL	90-05-1
HELIOTROPINE	120-57-0
Hydrogen Gas	1333-74-0
Hydroquinone	123-31-9
ISOPROPYL ALCOHOL	67-63-0
Isopropyl Myristate	110-27-0
Isopulegol	89-79-2
LEVULINIC ACID	123-76-2
Lignin Vanillin	121-33-5
MENTHOL JP -DM	2216-51-5
Methyl alcohol	67-56-1
N -Heptane	142-82-5
Nitrogen	7727-37-9
OCIMENOL MIX DM	5986-38-9
PEG-400 (PG)	25322-68-3
PROPION ALDEHYDE	123-38-6
p-toluenesulfonic acid	104-15-4
quinoline	91-22-5
Sodium Bicarbonate	144-55-8
Sodium carbonate	497-19-8
Sodium Chloride	7647-14-5
SODIUM HYDROXIDE (50%)	1310-73-2
Sodium methylete	124-41-4
Sulfuric acid	7664-93-9
Toluene	108-88-3
Tridecanedioic acid	505-52-2
Tridecanedioic acid, dimethyl ester	1472-87-3/1344-28-1

Soil Map—Will County, Illinois
(The Nutrasweet Company)



MAP LEGEND

	Area of Interest (AOI)		Very Stony Spot
	Soils		Wet Spot
	Soil Map Units		Other
Special Point Features		Special Line Features	
	Blowout		Gully
	Borrow Pit		Short Steep Slope
	Clay Spot		Other
	Closed Depression	Political Features	
	Gravel Pit		Cities
	Gravelly Spot	Water Features	
	Landfill		Oceans
	Lava Flow		Streams and Canals
	Marsh or swamp	Transportation	
	Mine or Quarry		Rails
	Miscellaneous Water		Interstate Highways
	Perennial Water		US Routes
	Rock Outcrop		Major Roads
	Saline Spot		Local Roads
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		
	Spoil Area		
	Stony Spot		

MAP INFORMATION

Map Scale: 1:4,550 if printed on A size (8.5" x 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 16N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Will County, Illinois
Survey Area Data: Version 6, Feb 12, 2010

Date(s) aerial images were photographed: 7/7/2007; 7/30/2007

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Will County, Illinois (IL197)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
235A	Bryce silty clay, 0 to 2 percent slopes	28.4	35.6%
238A	Rantoul silty clay, 0 to 2 percent slopes	1.2	1.5%
320B	Frankfort silt loam, 2 to 4 percent slopes	27.9	34.9%
320B2	Frankfort silty clay loam, 2 to 4 percent slopes, eroded	0.3	0.4%
320C2	Frankfort silty clay loam, 4 to 6 percent slopes, eroded	19.2	24.0%
W	Water	2.9	3.7%
Totals for Area of Interest		79.9	100.0%